

## CLAIMS

1. A method of constructing a Boolean expression in a clinical setting, comprising:
  - identifying at least a first and a second data assertion to add to the Boolean expression;
  - adding at least one Boolean logical operator to the Boolean expression;
  - determining an order of evaluation for the first and second data assertions; and
  - visually depicting the first and second data assertions and the Boolean logical operator in a hierachal display.
- 10 2. The method of claim 1, further comprising determining an action to be taken when the Boolean expression evaluates to true.
3. The method of claim 2, further comprising limiting the group of users for which the action applies.
- 15 4. The method of claim 1, further comprising allowing a user to modify the order of the first and the second data assertion with the use of an up button or a down button.
5. The method of claim 1, further comprising evaluating first either the first or the second data assertion that is displayed highest in the hierachal display.
- 20 6. The method of claim 1, further comprising linking the Boolean expression to a patient's electronic medical record.

7. The method of claim 1, further comprising evaluating first either the first or the second data assertion that is indented furthest from the left in the hierachal display.
8. The method of claim 1, wherein the step of selecting the first data assertion comprises selecting a condition that, when evaluated, is either true or false.
9. The method of claim 1, wherein the step of selecting the first data assertion comprises selecting one of: a single element, a range, a list, or a programming code.
10. The method of claim 1, wherein adding the at least one Boolean logical operator comprises adding one of the following Boolean logical operators: AND, OR, or NOT.
11. A method of constructing a Boolean expression to provide clinical decision support, comprising:
  - identifying a set of data assertions to be added to the Boolean expression;
  - selecting a plurality of data assertions from the set of data assertions to add to the Boolean expression;
  - adding a plurality of Boolean logical operators to the Boolean expression;
  - determining an order of evaluation for the plurality of data assertions;
  - visually depicting the plurality of data assertions and the plurality of Boolean logical operators in a hierachal display of the Boolean expression;
- 20 determining an action to be taken when the Boolean expression evaluates to true; and
- limiting the group of users for which the action applies.

12. The method of claim 11, further comprising allowing a user to modify the order of the plurality of data assertions with the use of one of an up button or a down button.
13. The method of claim 11, further comprising evaluating the plurality of data assertions row by row, from top to bottom in the hierachal display, when none of the data assertions are indented.  
5
14. The method of claim 11, further comprising linking the Boolean expression to a patient's electronic medical record.
15. The method of claim 11, further comprising allowing a user to indent one or  
10 more of the data expressions from the plurality of data expressions to represent different levels of parenthetical abstraction in the Boolean expression.
16. The method of claim 11, further comprising evaluating the plurality of data assertions indented furthest from the left first, working outward through lesser indented data assertions, and evaluating multiple data assertions indented to the same  
15 level from top to bottom in the hierachal display.
17. The method of claim 11, wherein the step of selecting the plurality of data assertions comprises selecting conditions that, when evaluated, are either true or false.
18. A method of constructing a clinical decision support rule expression comprising:  
20 identifying a set of data assertions to be added to the rule expression; selecting a plurality of data assertions from the set of data assertions to add to a rule expression grid, wherein the rule expression grid includes a plurality of rows

with one of the plurality of data assertions displayed in each row or the plurality of rows;

adding one or more Boolean logical operators to the rule expression, wherein the one or more Boolean logical operators are added to the rows of the rule expression  
5 grid;

determining an order of evaluation for the plurality of data assertions; and visually depicting the rule expression grid as a hierachal display of the rule expression.

19. The method of claim 18, further comprising determining an action to be taken  
10 when the rule expression evaluates to true.

20. The method of claim 19, further comprising limiting the group of users for which the action applies.

21. The method of claim 18, further comprising evaluating the plurality of data assertions row by row, from top to bottom in the hierachal display, when none of the  
15 data assertions are indented.

22. The method of claim 18, further comprising allowing a user to modify the order of the plurality of data assertions in the rule expression grid, with the use of an up button or a down button.

23. The method of claim 18, further comprising allowing a user to indent one or  
20 more of the data expressions from the plurality of data expressions to represent different levels of parenthetical abstraction in the rule expression.

24. The method of claim 18, further comprising evaluating the plurality of data assertions for the rows indented furthest from the left first, working outward through lesser indented rows, and evaluating multiple rows indented to the same level from top to bottom in the hierachal display.
- 5 25. A system for constructing a Boolean expression in a clinical setting, comprising:
  - means for identifying at least a first and a second data assertion to add to the Boolean expression;
  - means for adding at least one Boolean logical operator to the Boolean expression;
  - 10 means for determining an order of evaluation for the first and second data assertions; and
  - means for visually depicting the first and second data assertions and the Boolean logical operator in a hierachal display.
- 15 26. The system of claim 25, further comprising means for determining an action to be taken when the Boolean expression evaluates to true.
27. The system of claim 26, further comprising means for limiting the group of users for which the action applies.
28. The system of claim 25, further comprising means for allowing a user to modify the order of the first and the second data assertion with the use of one of an up button or a down button.

29. The system of claim 25, further comprising means for evaluating first either the first or the second data assertion that is displayed highest in the hierachal display.
30. The system of claim 25, further comprising means for allowing a user to modify the order of the first and the second data assertion with the use of one of an up 5 button or a down button.
31. The system of claim 25, further comprising means for evaluating first either the first or the second data assertion that is indented furthest from the left in the hierachal display.
32. The system of claim 25, wherein the means for adding the at least one Boolean 10 logical operator comprises means for adding one of the following Boolean logical operators: AND, OR, or NOT.
33. An article comprising a machine-accessible medium having stored thereon instructions that, when executed by a machine, cause the machine to:
  - identify a set of data assertions to be added to a clinical decision support rule 15 expression;
  - select a plurality of data assertions from the set of data assertions to add to a rule expression grid, wherein the rule expression grid includes a plurality of rows with one of the plurality of data assertions displayed in each row or the plurality of rows;
  - add one or more Boolean logical operators to the rule expression, wherein the 20 one or more Boolean logical operators are added to the rows of the rule expression grid;
  - determine an order of evaluation for the plurality of data assertions; and

visually depict the rule expression grid as a hierachal display of the rule expression.

34. The article of claim 33, having further instructions that, when executed by the machine, cause the machine to determine an action to be taken when the rule expression evaluates to true.
  - 5
35. The article of claim 33, having further instructions that, when executed by the machine, cause the machine to limit the group of users for which the action applies.
36. The article of claim 33, having further instructions that, when executed by the machine, cause the machine to evaluate the plurality of data assertions row by row, from top to bottom in the hierachal display, when none of the data assertions are indented.
  - 10
37. The article of claim 33, having further instructions that, when executed by the machine, cause the machine to allow a user to modify the order of the plurality of data assertions in the rule expression grid.
- 15 38. The article of claim 33, having further instructions that, when executed by the machine, cause the machine to allow a user to indent one or more of the data expressions from the plurality of data expressions to represent different levels of parenthetical abstraction in the rule expression.
39. The article of claim 33, having further instructions that, when executed by the machine, cause the machine to evaluate the plurality of data assertions for the rows indented furthest from the left first, working outward through lesser indented rows,
  - 20

and evaluate multiple rows indented to the same level from top to bottom in the hierachal display.